

## LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—LXVII.

BY HARRISON G. DYAR, WASHINGTON, D. C.

*Euchlaena effectoria* Walker.

*Egg.* Elliptical, rounded, depression and truncation not strong, rounded, the truncation a little oblique. Reticulations large, hexagonal, distinct, tending to lie in longitudinal rows but the cross striae equally heavy; white crests at the angles; surface shagreened; bluish green, turning dull purplish; size  $.8 \times .6 \times .5$  mm.

*Stage I.* Head rounded, bilobed, flattish before, erect, not notched, brownish ochraceous, not shining, a little white frosted before; ocelli and jaws black. Body moderate, rather stout, normal, equal, segments slightly widened posteriorly and coarsely annulate. White; a broad, subdorsal vinous-brown band, joined to a single broad dorsal one on joints 10–13; a similar single ventral band, broken about the feet on joints 2–4; feet of joint 10 vinous, of 13 ochraceous, thoracic feet pale. Tubercles small, dark, normal; setae short, dark, very minutely capitate.

*Stage II.* Head slightly bilobed, flattened before, held flatly, luteous with brown dots in vertical rows, more distinct above; width .5 mm. Body moderate, even, greenish, the dark brown subdorsal and ventral stripes as before.

*Stage III.* Head broad, flat, held flatly, all dark purplish shaded and dotted, leaving two erect obscure pale sordid lines and a broad lunate band of pale above the mouth; width .8 mm. Body marked as before but filled in with sordid purplish shadings; sides broadly dull greenish, venter and feet dark. Faint narrow pale lines of whitish, addorsal and subdorsal ones the most distinct.

*Stage IV.* Head gray above with vertical lines of black dots, black on the face surrounding the transverse lunate pale gray bar over the lower part of clypeus; width 1.4 mm. Body moderate, smooth, dark gray dorsally with faint irregular pale addorsal and subdorsal lines; subventer broadly greenish, pale with dark spots on tubercles vii; venter diffusely dark brown. Tubercles black, conical.

*Stage V.* Head rounded, flattened especially below, held flatly; black, dull on the faces of the lobes, a broad white triangle below over clypeus and above anteriorly reaching up along the median suture; else gray brown, the lobes with vertical rows of oblique black spots in two rows alternating; antennae reddish; width 2 mm. Body cylindrical, normal, thorax depressed, tubercles elevated, tubercle ii of joint 9 especially high forming a pair of black papillae. Anal flap triangular, produced; a pair of subanal cones. Black-brown, reddish brown shaded, no defined lines; a

light whitish space dorsally on joints 5 to 7, illy defined, narrowed between the segments, appearing again on joints 10 to 12 less broadly. Venter more ochereous shaded with irregular blackish spots and streaks; lines pale and broken, crinkled, obscure.

*Stage VI.* Head quadrate, flattened, thicker at the vertex, slightly roundedly bilobed; sordid luteous gray before, a bicusped yellowish white band reaching over the clypeus; above darker gray with obscure straight vertical light streaks, the pale patch and black spots of former stage both absent; a slight darker line on upper angles of lobes; ocelli dark; width 2.8 mm. Body straight, stick-like, roughened by the anal cones and subpapillose dorsal tubercles, of which tubercle ii of joint 9 is much the largest. Back brown, mottled with subdued whitish and gray-black. Irregular light dorsal areas on joints 5 to 7, widest on joint 5 and on joints 10 to 12; joints 8-9 nearly black dorsally and an irregular blackish subdorsal band, rather broad. Sides broadly blackish shaded, leaving the venter narrowly pale. Feet of joint 10 large, pale wood brown, a black ring near the base and many small white dots above; feet of joint 13 dark like the sides. Thoracic feet pale, appressed. All finely mottled and dotted; tubercles black; spiracles black ringed.

Cocoon of coarse silk. Eggs from Washington, D. C., May 29; mature larvae July 21; first moth issued August 7. The larvae were fed on rose leaves. Probably they will eat a variety of food plants. The pupa is dark brown without any noteworthy characters.

## NEW ACRIDIIDAE FROM THE SOUTHERN STATES.

BY ALBERT P. MORSE, WELLESLEY, MASS.

SEVERAL previously unnoted members of this family were taken in the summer of 1905 during a second trip in the South under the auspices of the Carnegie Institution of Washington.

**Nomotettix cristatus denticulatus** var. nov.

This variety, for it is unlikely to be more than that, is more seabrous than the type form, with the margins of the pronotum very minutely serrulate, sides of the vertex of the headless regularly convex, its carina less protuberant, the carina of the pronotum thinner and higher, the middle femora with undulate margins, and the upper edges of the hind femora usually with inwardly or upwardly directed denticulate processes.

Six males, one female; Caddo, Haileyville, So. McAlester, I. T.; Denison, Tex. Aug. 6 to 13.

**Hippiscus immaculatus** sp. nov.

The specimen under consideration is the size of *H. rugosus*. The pronotum is less rugose, smoother in outline and in surface, a little narrower; the hind margin slightly obtuse-angulate, its sides straight and its apex rounded. Wings like those of *rugosus*, the tip infuscated but not maculate. Ground-color of tegmina a pale, almost vinaceous, brown; the basal half of the anal field suffused with fuscous except along the anal vein; the distal half of the costal field more or less suffused and the basal third finely maculate, the proximal part of the discoidal field evenly suffused, the veins and venules of the distal part more or less infuscated apically, and a slight fuscous suffusion near the base.

Compared with *rugosus* the specimen differs relatively little structurally or in wing-marking, but radically in the tegminal pattern which suggests that of *tuberculatus* but is much less distinct.

One male, Clarendon, Tex., Aug. 18.

**Podisma scudderi** sp. nov.

Head large, eyes large and prominent, vertex very blunt, but little protuberant,—in form and proportions recalling *Dendrotettix*. Pronotum robust, depressed rather than compressed, especially at the shoulders, carina distinct on metazone, evanescent on prozone, posterior margin slightly convex, sub-emarginate, sutures deeply impressed. Prosternal spine short, acutely pointed, conical with excavate sides. Tegmina ovate-lanceolate, separated by their own width, anterior margin strongly convex, posterior slightly so, apex evenly rounded. Carina of abdomen indistinct. Valves of ovipositor stout, outer margins finely dentate and strongly sinuate, contrasting markedly in robustness with the same organs in *P. glacialis variegata*, from which the presence of tegmina distinguishes it at a glance.

Color luteous beneath; above mixed olive green, fuscous, and brown, with more or less cherry red on inner and outer faces of hind femora. Feet greenish, tibiae varied, strongly pubescent, with black spines. Length: 25; hind femora: 12; pronotum: 5; tegmina:  $4 \times 2.5$  mm.

One female, Cheaha Mt., Ala., July 13, 2300 feet.

This is a stout-bodied species, resembling *Dendrotettix* in the form of the head and proportions of the eyes, and the discovery of the male will be awaited with interest. The single example secured was taken while sweeping grass and shrubbery in the vicinity of Pulpit Rock, near the extreme summit of the mountain. Protracted search for a male or additional examples was unavailing.

I take great pleasure in naming this notable species in honor of Mr. Scudder, whose scholarly researches in orthopterology form the foundation on which all later study of the North American representatives of the order must be based; whose interest, example, and friendship have been a never-failing inspiration.

**Melanoplus latens** sp. nov.

Subgenital plate of male from above rounded apically, in side view short, its lateral and ventral outlines nearly equal, a little elevated apically. Furcula obsolete or represented by two small, rounded protuberances. Last dorsal segment a little emarginate. Cerci long, a little surpassing the supra-anal plate, two-and-a-half times or more as long as their basal breadth, nearly four times as long as their middle breadth, tapering rapidly on basal fourth, bent slightly upward at this point, subequal or slightly expanded sub-apically, tapering to a rounded, flattened apex. Valves of ovipositor of female short, rather blunt and usually dull pointed.